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Appl. No. : 10/520,471
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Claim Listing

A listing of the claims, including new Claim 31 as added, is set forth below.

1-8. Cancelled.

9. (Previously Presented) A process for the preparation of a concentrated cake comprising performing two separate stages of filtration, wherein in the first filtration stage, a pre-layer of mineral matter is formed on a filtration membrane in the absence of a dispersant agent, and in the second filtration stage, which is operated continuous to the first filtration stage, the pre-layer of mineral matter from the first filtration stage is treated on the filtration membrane with a second aqueous suspension containing a dispersant agent to obtain a filtrate and a concentrated cake.

10. (Previously Presented) The process of Claim 9, wherein the second aqueous suspension contains mineral matter and the dispersant agent.

11. (Previously Presented) The process of Claim 9, wherein the second aqueous suspension contains the dispersant agent but not mineral matter.

12. (Previously Presented) The process of Claim 9, wherein the dispersant agent used in the second filtration stage is present between 0.01% and 10% by dry weight of dispersant relative to the dry weight of mineral matter filtered.

13. (Previously Presented) The process of Claim 9, wherein the dispersant agent used in the second filtration stage is present between 0.1% and 2% by dry weight of dispersant relative to the dry weight of mineral matter filtered.

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14. (Previously Presented) The process of Claim 9, wherein the quantity of dispersant agent present in the filtrate is controlled and limited by a continuous measurement of the electrical conductivity of the filtrate.

15. (Previously Presented) The process of Claim 14, wherein the second filtration stage is stopped as soon as the electrical conductivity of the filtrate increases.

16. (Previously Presented) The process of Claim 15, wherein the electrical conductivity is measured using an HI 8820N conductivity meter from Hanna Instruments (Portugal).

17. (Previously Presented) The process of Claim 9, wherein the dispersant agent is sodium polyacrylate.

18. (Previously Presented) The process of Claim 9, wherein the concentrated cake is subjected to compression.

19. (Previously Presented) The process of Claim 9, wherein the concentrated cake is subjected to shearing.

20. (Previously Presented) The process of Claim 9, wherein the mineral matter is natural calcium carbonate, chalk, calcite, marble, synthetic calcium carbonate, precipitated calcium carbonate, mixed carbonates of magnesium and calcium, dolomite, magnesium carbonate, zinc carbonate, lime, magnesia, barium sulphate, barita, calcium sulphate, silica, magnesio-silicate, talc, wollastonite, clay, alumino-silicate, kaolin, mica, metal or alkaline-earth oxides or hydroxides, magnesium hydroxide, iron oxide, zinc oxide, titanium oxide, titanium dioxide, or any mixtures thereof.

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21. (Previously Presented) The process of Claim 9, wherein the mineral matter is natural calcium carbonate, precipitated calcium carbonate, titanium dioxide, kaolin; aluminium hydroxide, clay or any mixtures thereof.

22. (Previously Presented) The process of Claim 9, wherein the mineral matter is natural calcium carbonate.

23. (Previously Presented) The process of Claim 9, wherein the mineral matter is precipitated calcium carbonate.

24. (Previously Presented) The process of Claim 9, wherein the mineral matter is titanium dioxide.

25. (Previously Presented) The process of Claim 24, wherein the titanium dioxide is in its anatase or rutile form.

26. (Previously Presented) The process of Claim 9, wherein the mineral matter is kaolin.

27. (Previously Presented) The process of Claim 9, wherein the mineral matter is aluminium hydroxide.

28. (Previously Presented) The process of Claim 9, wherein the mineral matter is clay.

29. (Previously Presented) The process of Claim 9, wherein an aqueous suspension of mineral matter is obtained from the concentrated cake.

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30. (Previously Presented) The process of Claim 29, wherein the aqueous suspension of mineral matter is obtained from shearing the concentrated cake.

31. (New) The process of Claim 9, wherein the filtrate obtained from the second filtration stage contains a near-zero quantity of dispersant.